

WHAT IS CLAIMED IS:

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1. A personal identification apparatus  
comprising:

a storage device configured to store specific  
5 information of each of registered persons;

an extraction device configured to extract  
specific information of an object person from the  
object person;

a classification device configured to classify  
10 whether the object person is included in the registered  
persons by comparing the specific information of the  
registered persons, which is stored in said storage  
device, with the specific information of the object  
person, which is extracted by said extraction device;  
15 and

a registered information operation device  
configured to sort an arrangement order of pieces of  
the specific information of the registered persons,  
which is stored in said storage device, in accordance  
20 with a use situation of the registered persons, or set  
whether the registered persons are to be subjected to  
classification.

2. An apparatus according to claim 1, wherein  
said registered information operation device changes  
25 the arrangement order of pieces of the specific  
information of the registered persons in accordance  
with an elapse time from a preceding classification

time or a frequency of classification between the registered persons and the object person.

3. An apparatus according to claim 1, wherein when said classification device fails the  
5 classification between the object person and the registered persons, said classification device executes retry using the specific information of the object person which is extracted by said extraction device.

4. An apparatus according to claim 1, wherein  
10 when said classification device fails classification between the object person and the registered persons, said extraction device extracts another specific information of the object person which differs from the specific information extracted from the object person,  
15 and said classification device compares the another specific information with the specific information of each of the registered persons to verify the specific information.

5. An apparatus according to claim 1, wherein  
20 when said classification device fails classification between the object person and the registered persons, said classification device executes retry using the specific information of the object person extracted by said extraction device and the specific information of  
25 each of the registered persons stored in said storage device.

6. An apparatus according to claim 1, wherein

5 said extraction device comprises a face region detector  
device configured to detect a face region of the object  
person as the specific information of the object person,  
a facial part detector configured to detect facial  
10 parts of the object person based on face region image  
information obtained by said face region detector  
device, and a feature extraction device configured to  
extract a feature of the object person based on  
grayscale information which is extracted for each pixel  
15 from the face region based on positional information of  
the facial parts.

7. An apparatus according to claim 1, wherein  
said storage device stores respective personal  
information including the specific information of the  
15 registered person, the dictionary, name of the  
registered person, registration number, registration  
date when these pieces of information are stored in  
said storage device, and date/time and place of  
identification of the registered person.

20 8. An apparatus according to claim 1, which  
comprises a presentation device configured to present  
information stored in said storage device together with  
an order in which pieces of the information are stored  
in said storage device.

25 9. An apparatus according to claim 1, wherein  
said registered information operation device sorts and  
updates information read out from said storage device

in accordance with any condition and sends sorted information to said storage device to store it therein.

10. An apparatus according to claim 1, wherein said registered information operation device comprises  
5 a control determination device configured to determine a sorting method for the information stored in said storage device, compute a time required for determination of sorting, and change items of the information, a sorting device configured to sort pieces  
10 of the information in accordance with the reference designated by said control determination device to change the order of pieces of the registered information, and transmit the sorted information to said registered information storage device.

15 11. An apparatus according to claim 10, wherein said sorting device sort the pieces of information, which are arranged first in the order of registration number, in the ascending order of elapse times from the last classification of the object person and registered  
20 person by means of said classification device.

12. An apparatus according to claim 10, wherein said sorting device sorts automatically the pieces of information at a predetermined time interval.

25 13. An apparatus according to claim 10, wherein said sorting device performs automatically the sorting when classification between the registered persons and the object person has been executed.

14. An apparatus according to claim 10, wherein said sorting device performs the sorting in accordance with request of an administrator.

15. An apparatus according to claim 1, wherein  
5 said registered information operation device includes a selector configured to select appropriately the pieces of registered person information stored in said storage device depending on whether they are information to be identified.

10 16. An apparatus according to claim 1, wherein said storage device stores face information of the registered persons as the specific information of the registered persons, said extraction device extracts the face information of the object person as the specific  
15 information of the object person, said classification device includes an ID reader configured to read the registered information and identifies the object person by computing a similarity between the face information extracted by said extraction device and face  
20 information corresponding to the registered persons stored in said storage device.

17. An apparatus according to claim 1, wherein  
25 said classification device performs verification for only pieces of information at higher-order positions in accordance with the order of sorted information.

18. An apparatus according to claim 17, wherein  
said classification device performs retry by comparing

information present at a lower-order position in said storage device with the specific information of the object person when said classification device fails verification between the specific information stored in said storage device and the specific information extracted by said extraction device.

19. An apparatus according to claim 17, wherein said classification device calculates a similarity between each of a given number of pieces of information read out from said storage device and the specific information of the object person to obtain a plurality of similarities, and selects a maximum similarity from the similarities to obtain a classification result.

20. An apparatus according to claim 1, wherein said classification device performs comparison for selected pieces of the sorted information in accordance with the order of the sorted information.

21. An apparatus according to claim 20, wherein said classification device computes a similarity between each of pieces of information which are selected by a flag and read out from said storage device and the specific information of the object person and outputs a piece of information having a maximum similarity as a classification result.

22. An apparatus according to claim 17, wherein said classification device performs retry by collating a feature extracted newly by said extraction device

with each of features of the specific information read  
out from said storage device when said classification  
device fails verification between the specific  
information stored in said storage device and the  
5 specific information extracted by said extraction  
device.

23. A personal identification apparatus  
comprising:

a storage device configured to store a dictionary  
10 including pieces of specific information of a plurality  
of registered persons which are arranged in a given  
order;

an extraction device configured to extract  
specific information from an object person;

15 a classification device configured to classify  
whether the object person is a registered person by  
comparing the specific information of the object person  
with the specific information contained in said  
dictionary; and

20 a registered information operation device  
configured to sort the pieces of information contained  
in said dictionary in accordance with a use situation  
of the registered person or limit the object person.

24. A personal identification method comprising:

25 storing specific information of each of registered  
persons in a storage device;

extracting specific information of an object

person from the object person;

classifying whether the object person is included  
in the registered persons by comparing pieces of  
specific information of the registered persons, which  
5 are stored in the storage device, with the specific  
information of the object person, which is extracted in  
the extracting step; and

sorting an order of the pieces of specific  
information of the registered persons, which are stored  
10 in the storage device, in accordance with a use  
situation of the registered persons, or setting whether  
the registered persons are to be subjected to  
classification.

25. A method according to claim 24, wherein the  
15 sorting step includes changing the order of the pieces  
of specific information of the registered persons in  
accordance with an elapse time from a preceding  
classification time or a frequency of classification  
between the registered persons and the object person.

20 26. A method according to claim 24, wherein when  
classification fails in the classifying step, retry  
operation is performed using the specific information  
of the object person, which is extracted in the  
extracting step, or specific information of the object  
25 person, which is different from the specific  
information extracted for the object person from the  
object person, is extracted, and the extracted specific



information of the object person is compared with the specific information of each of the registered persons, which is stored in the storage device.

27. A method according to claim 24, wherein when classification fails, the classifying step comprises performing retry operation using the specific information of the object person, which is extracted in the extracting step, and the specific information of each of the registered persons, which is stored in the storage device, or the extracting step comprises extracting specific information of the object person, which is different from the specific information extracted for the object person from the object person, and the classifying step comprises comparing the extracted specific information of the object person with the specific information of each of the registered persons, which is stored in the storage device.

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